

VENTRAL NEURAL PATTERNING BY NKX HOMEODOMAIN GENES: NKX6.1
CONTROLS SOMATIC MOTOR NEURON AND VENTRAL INTERNEURON
FATES

Abstract of the Disclosure

This invention provides a method of converting a stem
cell into a ventral neuron which comprises introducing
into the stem cell a nucleic acid which expresses
homeodomain transcription factor Nkx6.1 protein in the
stem cell so as to thereby convert the stem cell into the
ventral neuron. Provided are methods of diagnosing a
motor neuron degenerative disease in a subject. Also
provides is a method of treating neuronal degeneration in
a subject which comprises implanting in diseased neural
tissue of the subject a neural stem cell which comprises
an isolated nucleic acid molecule which is capable of
expressing homeodomain Nkx6.1 protein under conditions
such that the stem cell is converted into a motor neuron
after implantation, thereby treating neuronal
degeneration in the subject.